

M A T H E M A T I C A L P H Y S I C S S E M I N A R

Rutgers University
Hill Center - Room 705

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Topics in Quantum Entropy and Entanglement

Abstract

Several recent results on quantum entropy and the uncertainty principle will be discussed. This is partly joint work with Eric Carlen on lower bounds for entanglement, which has no classical analog, in terms of the negative of the conditional entropy, $S_1 - S_{12}$, whose negativity, when it occurs, also has no classical analog.

It is also partly joint work with Rupert Frank on the uncertainty principle for quantum entropy which compares the quantum von Neumann entropy with the classical entropies with respect to two different bases. We prove an extension to the product of two and three spaces, which has applications in quantum information theory.